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Reply to Comment on "Danish auroral science history" by P. Stauning in Hist. Geo Space Sci., 2, 1–28, 2011

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I am indebted to T. S. Jørgensen for pointing out that William Ian Axford was a citizen of New Zealand, and not of Canada, and that some clarification on the work of Tycho Brahe was needed. I am also indebted to Jørgensen for bringing to my attention the useful review of Adam Paulsen's work by Jørgensen and Rasmussen (2006).

Only a few scattered observations of aurora were made in Scandinavia prior to those of Tycho Brahe (e.g. Silverman, 1992). The observations from Brahe's observatory at Uranienborg, beginning in November 1582 and continuing until March of 1597, were the first systematic observations carried out in Denmark. They were noted as part of a diary that included weather observations and notices of other events, and are thus well dated. Some of the observations include a precise description of the position of the aurora (denoted as "chasmata", the usual term for aurora, derived from Aristotle) relative to the stars. The observations continued until 1597 when Brahe left for Prague, where he died in 1601, never to return to Denmark. The original (hand-written) diary from Uranienborg is held in Vienna as noted among the article's references and is available at the web site: http://openlibrary.org/books/OL23319258M/Meteorologiske_dagbog_holdt_paa_Uraniborg_for_aarene_1582-1597.

As noted in the cited article an analysis of the auroral data was carried out by Paul la Cour in 1876, and is consistent with contemporary results, such as the annual variation of occurrence. Furthermore, only two auroras are noted during the 6 years after 1591 in contrast to the 75 occurrences reported during the 10 preceding years. This is consistent with a probable decline in activity, as indicated in the work by Silverman (1992), for instance, Fig. 3, p. 337, and Fig. 6, p. 339.

In order to keep the cited paper within a reasonable length, only a short paragraph indicating more recent work was included. This short half page section 12: "*Further Danish auroral research in the IQSY years 1964–65 and thereafter*" describes observations of auroras during IQSY as a natural continuation and closure of the previous sections. Further activities are mentioned cursorily only, in order not to give an inappropriate impression of completeness. These post-IGY research activities are reported in well over 300 scientific papers authored or co-authored by Danish scientists.

In conclusion: Danish auroral research for the past several years has been carried out with a multiplicity of instruments in a variety of specialized fields. A proper coverage of this work requires several papers, probably by a variety of authors. Hopefully such studies will be carried out over the next few years.

Edited by: S. Silverman

References

Jørgensen, T. S. and Rasmussen, O.: Adam Paulsen, a pioneer in auroral research, Eos, Transactions, American Geophysical Union, 87, p. 61 and p. 66, 2006.

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